



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,609	12/26/2001	Liangchi Alan Hsu	730.39974X00	4421
20457	7590	01/21/2004	EXAMINER	
ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-9889			TSEGAYE, SABA	
			ART UNIT	PAPER NUMBER
			2662	

DATE MAILED: 01/21/2004

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/025,609

Applicant(s)

HSU ET AL.

Examiner

Saba Tsegaye

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36, 53 and 55-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 53 and 55 is/are allowed.
- 6) ☒ Claim(s) 1-10, 35, 36, 56, 57 and 58 is/are rejected.
- 7) ☒ Claim(s) 11-34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Balachandran et al. (US 6,567,375).

Balachandran discloses, in Fig. 2, a base station 12 and mobile stations 20, 30, and 40. Further, Balachandran discloses a process for controlling selection of a modulation and coding selection method to be used by a base transceiver station 12 to transmit data packets over a forward shared channel to a mobile station 20, 30, 40 comprising:

storing information at the base transceiver station, the information containing modulation and coding selection methods which may be selected to transmit data packets over the forward shared channel to the mobile station 20, 30, 40 (column 5, lines 37-49) ;

receiving from the mobile station at the base transceiver station a quality indication of transmission of transmission of data packets over the forward channel (column 4, lines 14-35); and

selecting a modulation and coding selection method from a plurality of modulation and coding selection methods which may be used to transmit data packets on the forward channel dependent upon the received quality indication of the feedback of the first data packets (column 5, lines 37-column 6, line 57, column 7, line 60- column 8, line 5); and wherein

the quality indication is processed at the base transceiver station to choose from a plurality of groups of selectable modulation and coding methods a modulation and coding method to be used to transmit the second data packets from one of the groups with a modulation and coding method selected from each group optimizing a different characteristic of the

Art Unit: 2662

transmission of the second data packets (Fig. 3; column 5, line 50-column 6, line 57; column 7, lines 10-19).

2. Claims 1-6, 57 and 58 are rejected under 35 U.S.C. 102(e) as being anticipated by Airy et al. (US 6,400,699).

Regarding claim 1, Airy discloses, in Fig. 3, an apparatus and methods for scheduling wireless transmission of data blocks between at least one antenna of a base transceiver station and multiple subscriber units 397, 399. Further, Airy discloses a process for controlling selection of a modulation and coding selection method to be used by a base transceiver station to transmit data packets over a forward shared channel to a mobile station comprising:

storing information at the base transceiver station, the information containing modulation and coding selection methods which may be selected to transmit data packets over the forward shared channel to the mobile station (column 10, lines 35-42);

receiving from the mobile station at the base transceiver station a quality indication of transmission of data packets over the forward channel (column 5, lines 30-36; column 10, lines 35-42); and

selecting a modulation and coding selection method from a plurality of modulation and coding selection methods which may be used to transmit data packets on the forward channel dependent upon the received quality indication of the feedback of the first data packets (column 3, lines 16-25; column 10, line 56-column 11, line 5; column 12, lines 5-12); and wherein

the quality indication is processed at the base transceiver station to choose from a plurality of groups of selectable modulation and coding methods a modulation and coding

Art Unit: 2662

method to be used to transmit the second data packets from one of the groups with a modulation and coding method selected from each group optimizing a different characteristic of the transmission of the second data packets (column 10, lines 21-64).

Regarding claim 2, Airy discloses a process, wherein the information correlates modulation and coding methods with frame error rate and throughput determined by the mobile station (column 3, lines 16-25).

Regarding claim 3, Airy discloses a process, wherein selection of one of the modulation and coding selection methods optimizes transmission of the data packets (column 10, lines 54-column 11, line 5).

Regarding claims 4-6, Airy discloses a process, wherein the quality indication of transmission comprises a ratio of E_c to N_t (column 10, lines 50-52).

Regarding claim 57, Airy discloses a process comprising: processing the quality indication at the base transceiver station to provide multiple triggers which are a function of the quality indication and using the multiple triggers to select a single group of the plurality of groups of selectable modulation and coding methods from which the modulation and coding methods from which the modulation and coding method used to transmit the second data packets is selected (column 10, lines 35-53).

Art Unit: 2662

Regarding claim 58, Airy discloses a process, wherein: one of the characteristics of transmission is frame error rate and another of the characteristics is throughput (column 10, lines 50-53).

Claim Rejections - 35 USC § 103

3. Claims 7-10 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Airy et al. (US 6,400,699) in view of Endo et al. (US 6,035,210).

Airy discloses all the claim limitations as stated above, except for the quality indication of transmission comprises a function of frame error rate or a function of throughput calculated by the mobile station.

Endo teaches a mobile terminal includes a radio signal reception and transmission device for radio communication with the radio base station, and a forward channel error measuring device for measuring a frame error rate of the forward channel radio signals from the radio base station so as to report it as a forward channel frame error rate to the radio base station.

It would have been obvious to one ordinary skill in the art at the time of the invention was made to add a function of frame error rate or a function of throughput calculated by the mobile station, such as that suggested by Endo, in the quality indication of Airy in order to provide a radio communication quality of a forward channel.

4. Claim 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Airy in view of Zhang et al. (WO 03/010984).

Art Unit: 2662

Airy discloses all the claim limitations as stated above, except for the stored information is stored in two tables and the channel is R-QIECH.

Regarding claim 35, Airy, in Fig. 8, shows a service flow table, which includes the type of modulation and coding to be used when providing the data blocks of the service flow request.

It would have been obvious to one ordinary skill in the art at the time of the invention was made to add more tables in the system of Airy in order to have a separate table for different information.

Regarding claim 36, Zhang teaches that the MS sends feedback information including a channel condition indicating the quality of the forward link on the reverse channel quality indication channel R-CQICH.

It would have been obvious to one ordinary skill in the art at the time of the invention was made to add a method that receive at base station a quality indication of transmission of data packets over the forward channel from the mobile station, such as that suggested by Zhang, in the method of Airy in order to increase total throughput.

Allowable Subject Matter

5. Claims 53 and 55 are allowed.

6. Claims 11-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments filed 11/03/03 have been fully considered but they are not persuasive. Applicant argues (Remarks, page 21) that Airy does not disclose "the selection of a modulation and coding method from a plurality of modulation encoding methods wherein the selection is based upon a quality indication being processed by the base transceiver station to choose from a plurality of groups of selectable modulation and coding methods".

However, Examiner disagrees with Applicant contention. Airy clearly discloses that the transmission mode selection (the type of modulation and coding to be used) can be dependent upon a quality of transmission link between the base station transceiver and the subscriber and a quality of service requested by the subscriber. Airy, further, shows, in Fig. 8, the type of modulation and coding to be used (a plurality of groups of selectable modulation and coding methods) when a quality of service requested by the subscriber.

With respect claim 57, Airy discloses that the transmission quality of the links between a subscriber unit and the base transceiver stations can be determined several different ways, such as a cyclic redundancy check and a signal to interference of noise ration monitoring.

With respect the claim rejection under 35 USC 103, Applicant argues (Remarks, page 22) that the Endo patent is not relevant to a selection of modulation and coding methods. It is respectfully submitted that the rejection is based the combination of the Airy patent and the Endo patent, and that the Airy patent, as pointed out above does teach this feature.

Further, applicant argues (Remarks, page 20) that Balachandran does not disclose "receiving feedback from the mobile station at the base transceiver station based upon

Art Unit: 2662

transmission of the first data packets of a quality indication of transmission of the first data packets over the forward channel to the mobile station”.

However, Examiner disagrees with Applicant contention. Balachandran clearly discloses that transmitting a first segment of the data packet at a first modulation and coding scheme and transmitting another segment of the data packet at a second modulation and coding scheme level which is different from the first modulation and coding scheme level based quality and the packet delay performance (column 4, lines 14-35; column 6, lines 1-34; column 7, lines 24-40).

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saba Tsegaye whose telephone number is (703) 308-4754. The examiner can normally be reached on Monday-Friday (7:30-5:00), First Friday off.

Art Unit: 2662

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (703) 305-4744. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

ST
January 16, 2004


JOHN PEZZLO
PRIMARY EXAMINER